ADDENDUM TO THE 2005 SÉNÉGAL DEMOGRAPHIC AND HEALTH SURVEY

INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES

Appropriate Infant and Young Child Feeding (IYCF) practices include breastfeeding through the age of two years, the introduction of solid and semisolid foods at age 6 months, and a gradual increase in the amount of food given and the frequency of feeding as the child gets older. The average, healthy **breastfed child** should receive solid and semisolid foods 2-3 times per day at age 6-8 months and 3-4 times per day at age 9-23 months, with an additional snack 1-2 times per day. The minimum frequencies for feeding children in developing countries are based on the energy output of complementary foods. The energy needs of children are based on age-specific total daily energy requirements, plus 2 SD (to cover almost all children), minus the average energy intake from breast milk. Infants with low breast-milk intake need to be fed more frequently than those with high breast-milk intake. However, care should be taken that feeding frequencies do not exceed recommended input from complementary foods because excessive feeding can result in displacement of breast milk (PAHO/WHO, 2003).

Although the World Health Organization recommends that infants be breastfed up to the age of two years, some infants are not breastfed at all, or stopped breastfeeding before their second birthday. Guidelines have been developed for these children, who may not have been breastfed because their mother was HIV-positive, or because their mother had died, or for other reasons (WHO, 2005). It is recommended that the **nonbreastfed child** be given solid and semisolid foods 4-5 times per day at age 6-23 months, with an additional snack 1-2 times per day.

Appropriate nutrition includes feeding children a variety of foods to ensure that nutrient requirements are met. Studies have shown that plant-based complementary foods by themselves are not sufficient to meet the needs of some children for certain micronutrients (WHO/UNICEF, 1998). Therefore, it is advised that children eat meat, poultry, fish, or eggs daily, or as often as possible. Vegetarian diets may not meet children's nutrient requirements unless supplements or fortified foods are also provided. Vitamin A-rich fruits and vegetables should be consumed daily, and the diets of children should include an adequate amount of fat. Fat is important in the diets of infants and young children because it provides essential fatty acids, facilitates absorption of fat-soluble vitamins (such as vitamin A), and enhances dietary energy density and palatability. Tea and coffee are not recommended for children because they contain compounds that inhibit iron absorption. Sugary drinks and excessive juice consumption should be avoided because other than energy they contribute little to the diet and decrease the child's appetite for more nutritious foods (PAHO/WHO, 2003).

In summary,

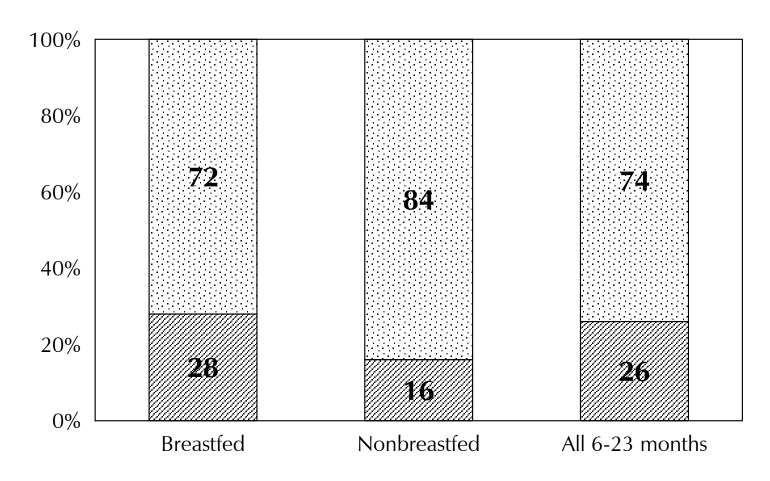
- Breastfed children age 6-23 months should receive animal-source foods and vitamin A-rich fruits and vegetables daily (PAHO/WHO, 2003). Because first foods almost always include a grain- or tuber-based staple, it is unlikely that young children who eat less than three food groups will receive both an animal-source food and a vitamin A-rich fruit or vegetable. Therefore, three food groups are considered the minimum number appropriate for breastfed children (Arimond and Ruel, 2004).

- Breastfed infants age 6-8 months should receive complementary foods 2-3 times per day, with 1-2 snacks; breastfed children age 9-23 months should be receive meals 3-4 times per day, with 1-2 snacks (PAHO/WHO, 2003). The table below shows the percentage of breastfed children who were fed at least the minimum number of times per day for their age (i.e., twice for infants age 6-8 months and three times for children age 9-23 months).

- Nonbreastfed children age 6-23 months should receive milk or milk products to ensure that their calcium needs are met. In addition, they need animal-source foods and vitamin A-rich fruits and vegetables. Four food groups are considered the minimum number appropriate for nonbreastfed young children.

- Nonbreastfed children age 12-23 months should be fed meals 4-5 times per day, with 1-2 snacks (WHO, 2005). The table shows the percentage of nonbreastfed children age 6-23 who were fed at least the minimum number of times per day (i.e., four times).

According to the results presented in the table below, 94 percent of (youngest) children in Sénégal age 6-23 months living with the mother received breast milk or breast milk substitutes during the 24-hour period before the survey, 59 percent had an adequately diverse diet, i.e., they had been fed foods from the appropriate number of food groups depending on their age and breastfeeding status, and 37 percent had been fed the minimum standard number of times appropriate for their age. Feeding practices for only one out of four children age 6-23 months met the minimum standard with respect to all three of these feeding practices (see figure below).



Breastfed children were more likely to be fed the minimum number of times and less likely to receive foods from the minimum number of groups than nonbreastfeeding children. Children in the older age groups are most likely to comply with minimum standards. Regional differences in the feeding practices of children are apparent in the 2005 Sénégal results; children residing in Saint Louis province are most likely to comply with the three recommended IYCF practices (30 percent) compared with children who reside in Matam province (19 percent). Children residing in urban areas are also more likely to be fed according to the recommended guidelines, 30 percent, compared with the children residing in rural areas, 25 percent..

Arimond, M., and M.T. Ruel. 2004. Dietary Diversity is Associated with Child Nutritional Status: Evidence from 11 Demographic and Health Surveys. *Journal of Nutrition* 134: 2579.

Pan-American Health Organization and World Health Organization (PAHO/WHO). 2003. *Guiding Principles for Complementary Feeding of the Breastfed Child*. Washington, D.C. and Geneva, Switzerland: PAHO/WHO.

World Health Organization (WHO). 2005. *Guiding Principles for Feeding Nonbreastfed Children 6 to 24 Months of Age*. Geneva, Switzerland: WHO.

World Health Organization and United Nations Children's Fund (WHO/UNICEF). 1998. *Complementary Feeding of Young Children in Developing Countries: A Review of Current Scientific Knowledge*. Geneva: World Health Organization, WHO/NUT98.1.

Addendum Table: Infant and young child feeding (IYCF) practices in Sénégal

Percentage of youngest children age 6-23 months living with their mother who are fed according to three IYCF feeding practices based upon number of food groups and times they are fed during the day or night preceding the survey by breastfeeding status and background characteristics, Sénégal 2005

	Among breastfed children 6-23 months, percentage fed:				Among nonbreastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
Background characteristic	3+ food groups[1]	Minimum times or more[2]	Both 3+ food groups and minimum times or more	Number of children (weighted)	Milk or milk products[3]	4+ food groups	4+ times or more	With 3 IYCF practices[4]	Number of children (weighted)	Breast milk or milk products	3+ or 4+ food groups[5]	Minimum times or more[6]	With all 3 IYCF practices	Number of children (weighted)
Age														
6-8	28.0	37.3	17.6	612	*	*	*	*	7	99.7	28.2	36.9	17.3	619
9-11	54.6	23.8	19.2	369	*	*	*	*	7	99.6	55.0	24.2	19.5	375
12-17	69.3	39.4	31.2	936	74.2	65.5	28.3	17.5	112	97.2	68.9	38.2	29.8	1,048
18-23	72.7	51.2	41.0	455	66.1	69.9	27.4	16.0	411	83.9	71.4	39.9	29.1	866
Sex														
Male	55.3	38.4	27.0	1,246	67.8	69.4	29.3	16.9	301	93.7	58.0	36.7	25.0	1,546
Female	59.0	38.9	28.5	1,126	68.1	67.7	25.3	15.7	236	94.5	60.5	36.6	26.3	1,362
Residence														
Urban	65.6	43.8	32.7	824	76.7	71.2	33.3	18.9	248	94.6	66.9	41.4	29.5	1,072
Rural	52.4	35.9	25.1	1,548	60.5	66.5	22.6	14.2	289	93.8	54.7	33.8	23.4	1,837
Region														
Dakar	68.3	43.3	30.1	356	82.5	65.3	36.2	20.3	121	95.6	67.6	41.5	27.6	477
Diourbel	58.7	42.7	33.6	287	50.3	71.9	25.1	14.8	82	88.9	61.6	38.8	29.4	370
Fatick	49.3	36.5	22.4	152	(46.7)	(72.4)	(21.1)	(17.3)	18	94.4	51.7	34.9	21.9	170
Kaolack	52.3	34.0	21.5	311	57.1	67.5	18.7	7.6	54	93.7	54.5	31.7	19.5	365
Kolda	37.9	42.5	20.8	243	(67.1)	(66.0)	(36.8)	(25.5)	32	96.1	41.2	41.9	21.3	276
Louga	56.6	30.5	25.3	168	79.9	68.2	26.5	25.2	42	96.0	58.9	29.7	25.3	210
Matam	63.5	25.7	22.0	94	78.1	74.4	16.7	6.7	25	95.4	65.8	23.9	18.8	118
Saint-Louis	66.9	35.7	33.7	160	84.7	78.7	19.3	17.2	41	96.9	69.3	32.4	30.3	202
Tambacounda	45.0	33.7	22.1	187	(49.1)	(34.0)	(25.7)	(4.7)	30	93.0	43.5	32.6	19.8	217
Thiès	68.3	45.3	36.7	333	67.9	80.7	25.8	15.4	80	93.8	70.7	41.5	32.6	413
Zuguinchor	46.8	36.9	26.1	78	*	*	*	*	12	93.6	46.8	38.7	25.6	90
Mother's education														
No education	53.3	35.9	24.9	1,711	63.3	67.7	25.3	14.7	369	93.5	55.9	34.0	23.1	2,080
Primary	62.6	42.7	31.7	506	78.1	68.3	36.8	20.6	127	95.6	63.7	41.5	29.5	633
Secondary	78.9	56.3	45.7	146	(78.8)	(77.9)	(18.6)	(17.5)	40	95.4	78.7	48.1	39.6	186
More than secondary	*	*	*	9	*	*	*	*	0	100.0	*	*	*	10
Wealth quintile														
Lowest	42.8	37.6	21.0	595	41.4	50.9	22.9	7.2	77	93.3	43.7	36.0	19.4	672
Second	53.2	33.6	25.1	526	62.4	62.5	22.5	11.8	103	93.8	54.7	31.8	22.9	629
Middle	60.5	32.6	25.3	510	70.8	72.9	27.9	17.0	113	94.7	62.7	31.7	23.8	623
Fourth	70.5	44.5	37.6	408	75.0	72.2	36.5	24.7	125	94.1	70.9	42.6	34.6	532
Highest	66.7	50.7	35.4	333	80.0	77.9	25.1	16.9	119	94.7	69.7	44.0	30.5	452
Total	57.0	38.7	27.7	2,372	68.0	68.7	27.5	16.4	537	94.1	59.2	36.6	25.6	2,909

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

[1] Food groups: a) infant formula, milk other than breast milk, cheese or yogurt or other milk products; b) foods made from grains, roots, and tubers, including porridge and, fortified baby food from grains; c) vitamin A-rich fruits and vegetables (and red palm oil); d) other fruits and vegetables; e) eggs; f) meat, poultry, fish, and shellfish (and organ meats); g) legumes and nuts; h) foods made with oil, fat, butter.

[2] At least twice a day for breastfed infants age 6-8 months and at least three times a day for breastfed children age 9-23 months

[3] Includes commercial infant formula, fresh, tinned and powdered animal milk, and cheese, yogurt and other milk products

[4] Nonbreastfed children age 6-23 months are considered to be fed with three IYCF practices if they receive other milk or milk products and are fed at least the minimum number of food groups, at least the minimum number of times per day.

[5] 3+ food groups for breastfed children and 4+ food groups for nonbreastfed children

[6] Fed solid or semisolid food at least twice a day for infants age 6-8 months, 3+ times a day for other breastfed children, and 4+ times a day for nonbreastfed children